

AMENDMENTS TO THE CLAIMS

What is claimed is:

1. (Currently amended) A method for stiffening or supporting first and second devices in a foldable arrays of devices, comprising the steps of:

5 providing an arrangement of a plurality of devices having first sides and having second sides opposite said first sides;

connecting a hinge along a first shared edge between the first device and the second device;

10 hingedly connecting a first ~~hinging means for bracing member~~ to a first side of a ~~the~~ first device;

hingedly connecting a second bracing member to the first bracing member along a second shared edge; and

hingedly connecting ~~a~~the second ~~hinging means for bracing member~~ to a first side of a the second device such that the second shared edge is parallel with the first

15 shared edge.

2. (Currently amended) The method of claim 1, wherein ~~said device comprises a device at least one of the devices is~~ selected from the group consisting of an electrochemical device, an electronic device, electro-mechanical device, a bio-electric device, a bio-chemical device, a bio-mechanical device, and ~~an~~ mechanical-chemical device.

20 3. (Original) The method of claim 2, wherein said electrochemical device comprises a thin-film electrochemical device.

4. (Original) The method of claim 1, wherein said first device and said second device are adapted to fold to at least an open and a collapsed position.

25 5. (Currently amended) The method of claim ~~24~~, wherein said collapsed position comprises a position selected from athe group consisting of an inwardly folded position and an outwardly folded position.

6. (Currently amended) The method of claim 1, further comprising the step of hingedly connecting an edge stiffener to at least a portion of an edge of one or more of said devices.

7. (Original) The method of claim 6, wherein said edge stiffener is adapted to provide deployment force.

8. (Original) The method of claim 1, further comprising the step of connecting an edge stiffener between a pair of said devices.

5 9. (Currently amended) The method of claim 6, wherein said edge stiffener is adapted to situatedeploy a pair or more of said devices in an open position.

10. (Canceled)

11. (Currently amended) The method of claim ~~40~~1, wherein said hinge comprises a hinge selected from the group consisting of a conventional hinge, a conventional hinge with
10 integrated torsion spring, a polyimide fold, and a carpenter hinge.

12. (Currently amended) The method of claim ~~40~~1, wherein said hinge is adapted to situatedeploy a pair or more of said devices in an open position.

13. (Currently amended) The method of claim ~~40~~1, wherein said hinge is adapted to provide deployment force to said array.

15 14. (Original) The method of claim 1, wherein one or more of said devices is flexible.

15. (Original) The method of claim 1, wherein one or more of said devices is rigid.

16. (Currently amended) The method of claim 1, wherein ~~said plurality one or~~
20 more of the devices comprises one or more devices selected from a~~the~~ group consisting of an inactive substrate, a solar energy cell, a direct conversion light antenna, and a radio-frequency identification tag.

17. (Original) The method of claim 16, wherein said solar energy cell comprises a thin-film photovoltaic cell.

25 18. (Original) The method of claim 17, wherein said thin-film photovoltaic cell comprises a copper-indium-gallium-selenide cell.

19. (Currently amended) The method of claim 1, wherein said ~~arrangement of a~~
plurality foldable array of devices comprises a plurality of devices arranged on a single substrate.

30 20. (Original) The method of claim 19, wherein said substrate is flexible.

21. (Currently amended) The method of claim 1, wherein said ~~arrangement~~
foldable array comprises a grid-like gridded array of devices.

22. (Currently amended) The method of claim 1, further comprising the step of
connecting a third ~~hinging means for bracing member to a~~ at least one of the first and second
devices and to ~~a hinging means for one of the first and second bracing members~~, wherein a
portion of said third ~~hinging means for bracing member~~ is adapted to fold.

23. (Currently amended) The method of claim 1, further comprising the step of
providing an electrostatic discharge layer on at least a ~~substantial portion of said array of~~
devices and ~~means for bracing members~~.

24. (Currently amended) ~~An apparatus~~ Apparatus for stiffening first and second
devices in a foldable arrays of devices comprising:

~~an arrangement of a~~ plurality of devices with at least the first device and the second
device hingedly connected along a first shared edge;

a first ~~brace~~ bracing member hingedly connected to ~~at the~~ first device; and

a second ~~brace~~ bracing member hingedly connected to ~~at the~~ first bracing member along
a second shared edge and hingedly connected to the second device ~~and to said~~
~~first brace member~~, wherein the second shared edge is parallel with the first
shared edge.

25. (Currently amended) The apparatus of claim 24, wherein at least one of said
devices comprises a device selected from the group consisting of an electrochemical device,
an electronic device, an electro-mechanical device, a bio-electric device, a bio-chemical
device, a bio-mechanical device, and ~~an~~ a mechanical-chemical device.

26. (Original) The apparatus of claim 25, wherein said electrochemical device
comprises a thin-film electrochemical device.

27. (Original) The apparatus of claim 24, wherein said first device and said
second device are adapted to fold to at least an open and a collapsed position.

28. (Currently amended) The apparatus of claim 27, wherein said collapsed
position comprises a position selected from ~~the~~ a group consisting of an inwardly folded
position and an outwardly folded position.

29. (Original) The apparatus of claim 24, further comprising an edge stiffener at an edge of one or more of said devices.

30. (Currently amended) The apparatus of claim 29, wherein said edge stiffener is adapted to ~~situated~~deploy a pair or more of said devices in an open position.

31. (Currently amended) The apparatus of claim 24, further comprising an edge stiffener hingedly connected between a pair of said devices.

32. (Original) The apparatus of claim 24, further comprising a hinge connecting said first device and said second device.

33. (Original) The apparatus of claim 32, wherein said hinge comprises a hinge selected from the group consisting of a conventional hinge, a conventional hinge with integrated torsion spring, a polyimide fold, and a carpenter hinge.

34. (Currently amended) The apparatus of claim 32, wherein said hinge is adapted to ~~situated~~deploy a pair or more of said devices in an open position.

35. (Currently amended) The apparatus of claim 32, wherein said hinge is adapted to provide deployment force to said foldable array.

36. (Original) The apparatus of claim 24, wherein one or more of said devices is flexible.

37. (Original) The apparatus of claim 24, wherein one or more of said devices is rigid.

38. (Currently amended) The apparatus of claim 24, wherein said ~~plurality~~foldable array of devices comprises one or more devices selected from ~~a~~the group consisting of an inactive substrate, a solar energy cell, a direct conversion light antenna, and a radio frequency identification tag.

39. (Original) The apparatus of claim 38, wherein said solar energy cell comprises a thin-film photovoltaic cell.

40. (Original) The apparatus of claim 39, wherein said thin-film photovoltaic cell comprises a copper-indium-gallium-selenide photovoltaic cell.

41. (Currently amended) The apparatus of claim 24, wherein said ~~arrangement of a plurality~~foldable array of devices comprises a plurality of devices arranged on a single substrate.

42. (Original) The apparatus of claim 41, wherein said substrate is flexible.

43. (Currently amended) The apparatus of claim 24, wherein said ~~arrangement~~foldable array comprises a ~~grid-like~~gridded array of devices.

44. (Currently amended) The apparatus of claim 24, further comprising a third bracing member hingedly attached to a ~~brace~~bracing member and to ~~at least one of the~~at least one of the devices, wherein said third bracing member comprises at least one foldable portion.

45. (Currently amended) The apparatus of claim 24, further comprising an electrostatic discharge layer covering at least a ~~substantial~~substantial portion of said ~~array of devices and brace~~array of devices and brace bracing members.

46. (Currently amended) A method for integrating passive deployment of a plurality of devices comprising the steps of:

providing ~~an arrangement of~~ a plurality of devices, at least a ~~portion of said first~~ devices and a second device being foldably ~~attached~~ connected, along a first shared edge, to one another;

hingedly ~~attaching~~connecting, along a second shared edge, a pair of hingedly connected bracing members; and

hingedly connecting the pair of bracing members to ~~athe pair of said foldably~~ connected devices;

and attaching a means for situating a pair of said devices in an open position to a plurality of said devices

wherein the first shared edge and the second shared edge are parallel, and the pair of bracing members is adapted to deploy the pair of devices in an open position.

47. (Currently amended) The method of claim 46, wherein ~~said means for situating comprise means~~the bracing members are selected from a group consisting of an edge stiffener, and a carpenter hinge.

48. (Currently amended) An apparatus for integrated passive deployment comprising:

~~an arrangement of~~ a plurality of devices, at least a ~~portion~~pair of said ~~the~~ devices being foldably ~~attached~~ connected to one another along a first shared edge; and

a pair of ~~hingedly connected~~ bracing members, hingedly connected along a second shared edge, and hingedly attached to ~~athe pair of said foldably connected~~

devices; and

a means for situating a wherein the first shared edge and the second shared edge are parallel, and the pair of bracing members is adapted to deploy the pair of said devices in an open position attached to a plurality of said devices.

5 49. (Currently amended) The apparatus of claim 48, wherein said means for situating ~~comprise means bracing members are~~ selected from ~~at~~ the group consisting of an edge stiffener, and a carpenter hinge.

50. (Currently amended) A method for integrating cabling with stiffening or supporting means comprising the steps of:

10 providing an arrangement of a plurality of devices, at least a ~~portion~~ pair of said the devices being foldably attached to one another; and

attaching ~~a pair of at least two~~ hingedly connected bracing members to ~~at~~ the pair of said foldably attached devices;

15 wherein at least one of the bracing members used in the attaching step comprises means for transmitting electricity.

51. (Currently amended) The method of claim 50, wherein two or more of the ~~said pair of hingedly connected bracing members~~ comprises means for transmitting electricity.

20 52. (Currently amended) The method of claim ~~54~~ 50, wherein said means for transmitting electricity comprises means for transmitting electrical energy to or from a power source.

53. (Currently amended) The method of claim ~~54~~ 50, wherein said means for transmitting electricity comprises means for communicating an electric signal.

25 54. (Currently amended) The method of claim ~~54~~ 50, wherein said means for transmitting electricity comprises ~~flex~~ flexible circuit technology.

55. (Currently amended) The method of claim ~~54~~ 50, wherein said means for transmitting electricity further comprising comprises one or more electronic circuits selected from the group consisting of a filter circuit, a boost circuit, a transformer circuit, an amplifier circuit, and an automatic bypass circuit.

56. (Currently amended) An apparatus for ~~integrated cabling with stiffening~~ or supporting means with integrated cabling comprising:

~~an arrangement of a plurality of devices, at least a portion~~pair of ~~said the~~ devices being foldably attached to one another; and

5 ~~a pair of hingedly connected~~at least two bracing members attached to ~~the~~ pair of ~~said~~ foldably attached devices;

wherein at least one of the bracing members comprises means for transmitting electricity.

57. (Currently amended) The apparatus of claim 56, wherein two or more of the ~~said pair of hingedly connected~~ bracing members comprises means for transmitting electricity.

58. (Currently amended) The apparatus of claim ~~57~~56, wherein said means for transmitting electricity comprises means for transmitting electrical energy to or from a power source.

59. (Currently amended) The apparatus of claim ~~57~~56, wherein said means for transmitting electricity comprises means for communicating an electric signal.

60. (Currently amended) The apparatus of claim ~~57~~56, wherein said means for transmitting electricity comprises ~~flex~~flexible circuit technology.

61. (Currently amended) The apparatus of claim ~~57~~56, further comprising one or more electronic circuits selected from the group consisting of a filter circuit, a boost circuit, a transformer circuit, an amplifier circuit, and an automatic bypass circuit.

62. (Currently amended) A method for manufacturing a deployable array of devices comprising the steps of:

providing ~~an arrangement of a plurality of devices, at least a portion~~pair of ~~said the~~ devices being foldably attached to one another along a first shared edge;

25 hingedly attaching at least a pair of ~~hingedly connected~~ bracing members, connected along a second shared edge, to the at least a pair of said foldably attached

devices, such that the first and second shared edges are parallel; and

30 ~~collapsing said arrangement of the~~ plurality of devices and ~~said the~~ pair of hingedly connected bracing members.

63. (Original) The method of claim 62, wherein said step of collapsing comprises at least one step of folding.

64. (Original) The method of claim 63, further comprising at least one step of rolling after said at least one step of folding.

5 65. (Currently amended) An apparatus for use as a deployable array of devices comprising:

~~an arrangement of a plurality of devices, at least a portion pair of said the devices being~~
~~foldably attached to one another along a first shared edge; and~~
at least a pair of ~~hingedly connected~~ bracing members, ~~hingedly attached connected~~ to
10 each other along a second shared edge parallel with the first shared edge, and
~~hingedly connected to the at least a pair of said foldably connected devices;~~
wherein ~~said arrangement of a the~~ plurality of devices and ~~said the~~ pair of ~~hingedly~~
~~connected~~ bracing members ~~is are~~ collapsed.

15 66. (Currently amended) The apparatus of claim 65, wherein ~~said arrangement of~~
~~the~~ plurality of devices and ~~said the~~ pair of ~~hingedly connected~~ bracing members is collapsed
using a collapsing technique employing at least one step of folding.

67. (Original) The apparatus of claim 66, wherein said collapsing technique further comprises at least one step of rolling.

20 68. (New) The method of claim 1, wherein at least one of the steps of
connecting a hinge along a first shared edge between the first device and the second
device,
hingedly connecting a first bracing member to a first side of the first device,
hingedly connecting a second bracing member to a first bracing member, and
25 hingedly connecting the second bracing member to a first side of the second device
comprises connecting a living hinge.

69. (New) The method of claim 68, wherein the living hinge comprises means for deploying at least one of the first and second devices without the application of external force.

30 70. (New) The apparatus of claim 24, including a living hinge configured
to hingedly connect at least one of

the first device to the second device,
a first bracing member to the first device,
the second bracing member to the first bracing member, and
the second bracing member to the second device.

5 71. (New) The apparatus of claim 70, wherein the living hinge is
configured to deploy at least one of the first and second devices without the application of
external force.